



ELECTRONICS, INC.  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089  
<http://www.nteinc.com>

## NTE631 Silicon Rectifier Diode High-Speed Switch SOD110 Surface Mount Package

**Description:**

The NTE631 is a high-speed switching diode fabricated in planar technology and encapsulated in a very small rectangular ceramic SOD110 SMD package.

**Features:**

- Small Ceramic SOD110 SMD Package
- High Switching Speed

**Applications:**

- High-Speed Switching in Surface Mounted Circuits

**Absolute Maximum Ratings:**

Repetitive Peak Reverse Voltage, $V_{RRM}$ .....	85V
Continuous Reverse Voltage, $V_R$ .....	75V
Continuous Forward Current (Note 1), $I_F$ .....	250mA
Repetitive Peak Forward Current, $I_{FRM}$ .....	5020mA
Non-Repetitive Peak Forward Current (Square Wave, $T_J = +25^\circ\text{C}$ Prior to Surge), $I_{FSM}$	
$t = 1\mu\text{s}$ .....	4A
$t = 1\text{ms}$ .....	1A
$t = 1\text{sec}$ .....	0.5A
Total Power Dissipation ( $T_A = +25^\circ\text{C}$ , Note 1), $P_{tot}$ .....	400mW
Operating Junction Temperature, $T_J$ .....	$+150^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-65^\circ$ to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient (Note 1), $R_{thJA}$ .....	315K/W
Thermal Resistance, Junction-to-Case, $R_{thJC}$ .....	200K/W

Note 1. Device mounted on an FR4 printed-circuit board.

**Electrical Characteristics:** ( $T_J = +25^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	$V_F$	$I_F = 1\text{mA}$	-	-	715	mV
		$I_F = 10\text{mA}$	-	-	855	mV
		$I_F = 50\text{mA}$	-	-	1.0	V
		$I_F = 150\text{mA}$	-	-	1.25	V

**Electrical Characteristics (Cont'd):** ( $T_J = +25^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Current	$I_R$	$V_R = 25\text{V}$	-	-	30	nA
			$T_J = +150^\circ\text{C}$	-	-	30
		$V_R = 75\text{V}$	-	-	1	$\mu\text{A}$
			$T_J = +150^\circ\text{C}$	-	-	50
Diode Capacitance	$C_d$	$f = 1\text{MHz}, V_R = 0$	-	-	1.5	pF
Reverse Recovery Time	$t_{rr}$	When switched from $I_F = 10\text{mA}$ to $I_R = 10\text{mA}$ , $R_L = 100\Omega$ , measured at $I_R = 1\text{mA}$	-	-	4	ns
Forward Recovery Voltage	$V_{fr}$	When switched from $I_F = 10\text{mA}$ , $t_r = 20\text{ns}$	-	-	1.75	V

